# newsletter

Upper Canada Railway Society

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# newsletter

Number 307 August, 1971

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Robert D. McMann, Editor.

Contributions to the NEWSLETTER are solicited. No responsibility can be assumed for loss or non-return of material, although every care will be exercised when return is requested.

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Members are asked to give the Society at least five weeks' notice of address changes.



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ART DISPLAY

ABITIBI PAPER CO. LTD. is sponsoring an art display of the locomotive paintings of Wentworth D. Folkins, in the Toronto Dominion Centre for two weeks commencing October 27th. UCRS members are invited to see these excellent railway paintings.

## The Cover

A SIX-CAR TRAIN of TTC Hawker Siddley subway cars heads south on the Yonge Street Subway in the open cut section south of Rosedale Station. In the background may be seen some of the development adjacent to and over the subway line which has taken place in the past seventeen years. (Ted Wickson)

## Coming Events

Regular meetings of the Society are held on the third Friday of each month (except July and August) at 589 Mt. Pleasant Road, Toronto, Ontario. 8.00 p.m.

Oct. 15: Regular meeting. Members' slide night.
(Fri.)

Oct. 22: Hamilton Chapter meeting. 8:00 p.m. in the CN
(Fri.) Station. James Street North, Hamilton.

BIG BROTHER EXCURSIONS

Kitchener-Waterloo Big Brothers present two rail excursions for Saturday, October 16, 1971:
Oktoberfest Express-Lv Toronto Union Station 0830; return from Kitchener 2230. Adult $6.50; child $3.25. Fare includes prepaid bus to the Old Market Square.
Grand River Special-Lv Kitchener CN Station 1230. Ride in CN coaches behind CN and CP Rail diesels to Brantford and return. Adult $4.50; child $3.00.
Tickets available Union Station or write Trip Committee Big Brother House, 111 Duke Street, Kitchener, Ontario.

## Readers' Exchange

WANTED: 8 or 16 mm of CPR steam locomotives, especially 2800 and 5900 series. Advise price and details to R. Baker, 2802 Ness Ave., Winnipeg 12, Man.

WANTED: One copy of January 1970 NEWSLETTER. Must be in good condition. Ernest J. Aplin, 6 Redwillow Drive, Don Mills 400, Ontario.

FOR SALE: black & white photographs, also colour slides of: CP 1057--front and side views, in and around roundhouse, on turntable, under way in yards, etc.; CN 6218--final weekend, at roundhouse, on turntable, being coaled and underway, etc.; L&PS L-2--front and side views (b&w only on this item). 8x10 single weight prints $1.50; double weight prints $2.25. 11x14 and larger prints available. All prints are spotted if necessary and individually printed. Dusan A. Cizman, 764 Guelph St., Kitchener, Ontario.

WANTED: The following publications. All magazines should be complete with covers and unclipped. Prices should make allowance for postage.
Trains Magazine--Vol. 1, #1; Vol. 16, #12; Vol 17, #'s 1, 2, 3, 8, 12; Vol. 18, #4; Vol. 19, #'s 3, 6, 11; Vol. 20, #'s 3, 8, 9, 12; Vol. 21, #'s 5-12; Vol. 22, #'s 1--12; Vol. 23, #'s 1, 2, 3, 4, 5, 6; Vol. 24, #'s 4 and 8; Vol. 25, #6; Vol. 28, #10; Vol. 29, #2.
UCRS Newsletter--all issues 1960 thro 1962; #'s 204-208, 216, 217, 221, 222, 224, 225, 226, 228, 229, 230, 231, 235, 236, 237, 240.
Short Line Railroader----#'s 1, 2, 8, 9, 10, 11, 12, 15, 19, 21-28, 31, 32, 34, 35.
Steam Locomotive & Railroad Tradition/ Steam Locomotive/ Railroading--#'s 3, 11.
ERA Headlights--Vol. 31, #4, Vols 25 thro 30 inclusive.
CERA Bulletin--all volumes prior to (but not including) No. 108.
Contact T.G.J. Gascoigne, P.O. Box 565, Oshawa, Ontario (416-725-9780). Please state price and condition of items.

# RAILWAY NEWS AND COMMENT

## CONCERN OVER RAILWAY ACCIDENTS

The number of rail derailments in Canada this year has already passed this total in the corresponding period last year, which is one of the worst on record. The accidents are occurring as railways are carrying ever-increasing volumes of flammable liquids, poisonous gases, industrial chemicals and other hazardous materials. The frequency has been increasing, at least in the past four years. There appears to be no reversal of this trend.

According to Canadian Transport Commission figures, the railway with the poorest record is Canadian National, whose derailment rate is much higher than that of CP Rail.

Since the beginning of the year to the weekend ending July 21st, there have been 160 derailments on the two main Canadian lines compared to 155 during the corresponding period in 1970. The number of collisions totals 27, the same as last year's figure in the same period. Derailments and collisions are the two main causes of rail accidents.

The number of derailments on the two lines for all of 1970 totalled 262, compared with 224 in 1969, 217 in 1968, and 200 in 1967. Of these derailments, 193 occurred on CN lines in 1970, compared with 158 in 1969, 146 in 1968, and 153 in 1967. There were 69 derailments on CP Rail lines in 1970, 66 in 1969, 71 in 1968, and 47 in 1967.

There were 44 collisions on the two lines in 1970--36 CN, eight CP Rail; 41 collisions in 1969--32 CN, nine CP Rail; 44 in 1968--30 CN, 14 CP Rail; 42 in 1967--33 CN, nine CP Rail.

The CTC has yet to report its findings on the derailment at Boston Bar, British Columbia, last February 15, when three trainmen were killed when their diesel fell into the Fraser River after hitting a rockslide.

Earlier this year, the CTC began a general inquiry into all aspects of railway safety. The inquiry adjourned late in July and will resume for final summation on the 13th of September. The inquiry was called in August 1970 after three railway accidents on consecutive days at Cobourg, Belleville and Port Hope.

The inquiry was then expanded to consider the Boston Bar accident, which played a contributory role in the walkout of railway engineers on the West Coast this spring. The engineers demanded improved safety features on rail operations through the Fraser canyon.

Sixteen days prior to the Boston Bar accident, three men survived the plunge of a CN diesel down a 25-foot embankment after hitting a rockslide near Lytton, also in the Fraser canyon. One of the survivors of this accident subsequently died in the Boston Bar accident.

On July 20th, a CN freight train derailed near Vinsulla, British Columbia, eighteen miles north of Kamloops. Three of seven propane tank cars in the consist derailed exploded in flames. A fourth car burned for two days as gas escaped from a leaking pressure valve. Flames from the propane fire spread to a cargo of bulk sulphur being carried in gondola cars, turning the sulphur into a burning, molten mass. Smoke and fumes from the fire spread 25 miles up the valley of the Thompson River, blighting all vegetation in the area. Residents in the surrounding area were evacuated. Dynamite was used to put out the fire in the fourth derailed burning propane tank car; the car shot into the air and travelled through 1500 feet. A bypass track was constructed around the derailment, so that service was resumed on the 22nd.

The CTC inquiry on the Boston Bar accident was sitting in Kamloops at the time of this derailment. A CTC official said he did not think that the inquiry would be expanded to include this accident at Kamloops.

Actual cause of the derailment at Kamloops is not known, but CTC investigators working out of Kamloops recently began to reassemble a section of twisted welded rail found at the Vinsulla site; they feel the rail may have contributed to the derailment. Site investigators are reluctant to talk about their inquiry, claiming the investigation not yet completed. It was disclosed their investigation has zeroed in on this section of welded rail.

An investigation by the U.S. National Transportation Safety Board following the derailment of a Penn Central passenger train near Bowie, Maryland in 1969, has shown that rail can buckle in hot sun and 90° to 100° temperatures. The rails are subject to high compressive forces caused by heat expansion and have a tendency to creep in the direction of predominant traffic flow. The investigation also showed that some welds were only partly fused and could weaken under pressure. The U.S. board usually makes full disclosure of all its investigations, including aviation and maritime accidents, on the principle that the information obtained can be used to prevent other accidents.

The same principle motivates CTC investigations but with the difference that its reports do not have to be disclosed. A commission spokesman said any recommendation for improved operating procedures arising from an investigation becomes the subject of 'correspondence' between the commission and the railways.

In its 1970 annual report the CTC states: "Committee inspectors investigated 275 derailments and 44 collisions between trains. Corrective action was taken where necessary." Similarly "Technical officers inspected 93,933 pieces of railway equipment in 1970 and reported 33,263 defects on 18,898 units." There is no mention on whether any corrective action was proposed or carried out.

The CTC first referred in 1969 to the safety problems being created by technological advances in the railway industry and started a special program to identify these problems. During the first half of 1970, its growing concern over the increase in the number of railway accidents led to the decision in August 1970 to conduct the special public inquiry into the three derailments referred to previously. It was later expanded to deal generally with railway maintenance and operating prectices and in all manners and things likely to cause or prevent railway derailments and collisions with trains.

Statistics show that while derailments are the major cause of train accidents, the main causes of derailments are defects in or improper maintenance of way and structures and defects in or failure of equipment. Equipment failures or defects are still the major cause of derailments, but, according to the U.S. National Transportation Safety Board study, improper maintenance of way is becoming an increasingly significant factor. These two factors account for almost 70% of all rail derailments, with the remainder largely charged to the negligence of employees.

The Nicola-North Thompson Regional District board (site of the Vinsulla derailment) considered the following resolution on rail safety. The resolution asked for legislation to force railways to provide firefighting equipment to control serious fires that occur as the result of derailments. Also requested are regulations requiring the separation of at least 40 car lengths between cars carrying flammable liquids and flammable solids, puncture-proof cars to carry flammable liquids, and the reduction of train speeds to 30 mph in built-up areas.

## TRAIN ROBBERY AT DORVAL

A group of five or six bandits, armed with machine guns, halted a Toronto-bound passenger train at Dorval, Quebec, August 4th, robbed the mail car and fled in a blue station wagon.

A CN spokesman said the bandits boarded the Lakeshore in Lachine at about 0950, moments before a scheduled stop at Dorval. The train had just started to slow down as it approached the Lachine area when the engineer spotted a man lying on the tracks.

As he slammed on the emergency brake, four other men jumped out from behind nearby bushes, climbed into the engine cab and forced the engineer and fireman to let them into the mail and express car.

Ordering the crew to lie down on the floor, the bandits slashed open the mail bags with knives, then fled. Left behind as the bandits fled along Highway 2 were two fully loaded machine gun clips and what police described as "a lot of bubble gum wrappers."

CN officials said it was not known what was taken from the baggage car or mail sacks. None of the passengers on the train were injured.

## CN TO SET UP PIPELINE DIVISION

An announcement is expected soon from Canadian National Railways on the formation of a pipeline division that the government-owned railway will utilize as its entry into northern pipelining of natural gas and transportation of solids, a field where it wants to compete with similar experiments being carried out by petroleum and transportation companies.

CN is already a partner in the Gas Arctic group that plans a trunk route along the Mackenzie River Valley to move gas from the North Slope of Alaska and the Canadian Arctic to mid-continental markets.

Spokesmen for the new division say that the over-all transportation capabilities and engineering knowledge of the railway lend themselves to diversification in the transportation field.

CN was spurred to action in pipelining by advanced work on this method of transportation by a consortium of CP Rail of Montreal and Shell Canada Ltd. of Toronto, which own equal interests in ShelPac Research and Development Ltd., which is studying the technological and economic feasibility of building a 1700-mile crude oil pipeline from the North Slope to Edmonton, where it would connect with existing systems. It also is working on feasibility studies of moving coal and sulphur from Alberta and British Columbia to the West Coast.

CN joined the Gas Arctic group in 1970 in a consulting capacity on the logistics problems of transporting pipeline materials into the North for the Gas Arctic's $1.5-billion project. It later became a full partner in the group that includes U.S. utility and distribution interests.

As the race for the pipeline permit among the three contending groups of companies warms up, the issue of federal participation in the projects becomes increasingly significant, according to industry spokesmen. Only one pipeline will be licenced by the Government initially and only for the transportation of natural gas.

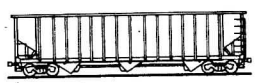
## THREE RAILWAY ACCIDENTS

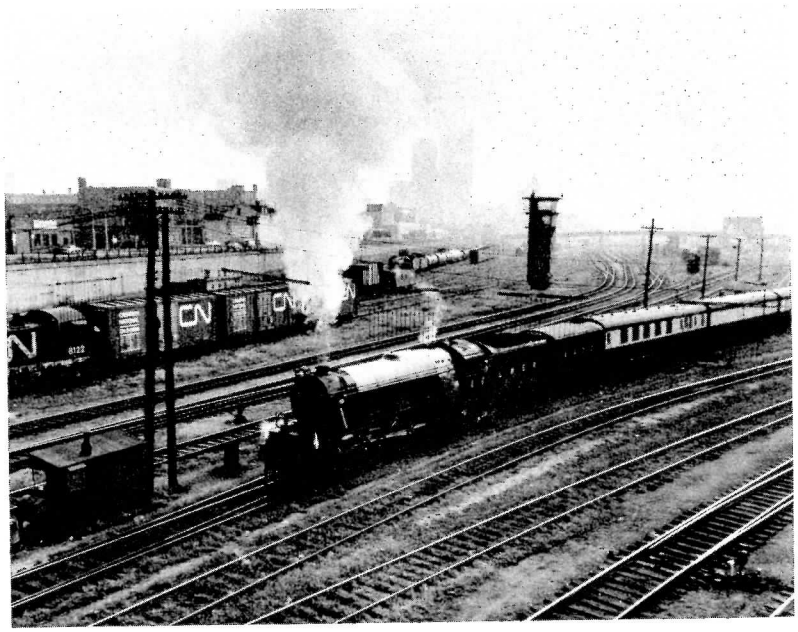
* Thirty-three empty LPG tank cars in the consist of a 100-car CP Rail freight were derailed near Lacombe, Alberta July 26th, on CP Rail's Calgary-Edmonton line. Two small explosions accompanied the derailment. An area 7000 feet in diameter was checked for gas fumes as fires burned in the wreckage for two days. There were no serious injuries.

* Go Transit rail commuter service was interrupted for several hours on August 4th, when a CP Rail wayfreight of three engines and 30 cars derailed on the CN main at Oakville. Seven cars and one of the diesels were derailed in the accident, near the Eighth Line. A tank car full of jet aviation fuel was derailed, but there was no damage to the tank car. There was one minor injury.

Go Transit trains operated as far as Clarkson in the morning rush hour, extra buses being pressed into service to bring commuters from Oakville and other points to the west.

* Three diesels (4595, 4570, 4574) and 26 cars of a westbound CN freight train were derailed on the evening of August 5th at Ridgeway, Ontario, after colliding with a dump truck, killing one person and injuring six. The sand-filled truck was crossing the track when it was hit by the freight. The brakeman on the freight was killed when a freight car landed on the engine he was riding. The engineer and tail-end brakeman were admitted to hospital with multiple injuries. The truck was demolished; its four occupants were thrown clear, but all suffered injuries.





LNER A-4 Pacific 4472 and her train bid a quiet farewell to Toronto and Canada on a hot, smoggy Saturday, August 14, 1971. After a ten month hibernation in CN's Spadina roundhouse, 'Flying Scotsman' and her train were readied for departure to Buffalo, New York. Eventual destination of 4472 and her exhibition train is rumoured to be the West Coast of the United States, specifically San Francisco.

(NEWSLETTER/Robert McMann)

# WORTH NOTING...

* Canadian National has placed an order for 175 containers with the Steadman Division of Interpool International Ltd. of Toronto. The order is in excess of $750,000 in value. Delivery of the containers is scheduled to begin in late September.

* Clark Equipment Co. of Buchanan, Michigan, trailer division, has developed a low-cost piggyback and container loader for railway cars--for use at locations where either lower volume or space limitations preclude use of faster but more expensive equipment. The machine will also serve as a supplimentary loading device at high-volume terminals.

* Canadian National has sold the station at Rockwood, Ontario to the Ontario Electric Railway Historical Association.

* Penn Central Transportation Co. has reported a loss of $155,916,555 for the seven months ending July 31st, compared with $183,330,227 for the corresponding period in 1970. Operating revenue for the seven-month period rose to $1,066,807,220 from $997,073,167 a year earlier.

* The Newfoundland Public Utilities Commission has denied an application by Canadian National Transportation Ltd., a subsidiary of Canadian National, for a licence to truck less-than-carload lots of freight and express between the mainland and Newfoundland. The commission said CN had not produced sufficient evidence that such a service was warranted. The objections of several private trucking companies when the application was made, in March 1970, forced the hearing. CN sought to make up capacity of the railcar ferry Patrick Morris, which sank early last year, by using trucks transported on the Stenna Carrier, a temporary replacement, which does not have railcar capacity.

# FIRST LRC COACH TESTED

The first phase in the development of Canada's newest supertrain--the Lightweight Rapid and Comfortable 120 mph aluminum passenger train--reached fruition on July 22nd, as the first prototype coach rolled out of the MLW Industries plant in Montreal to begin test runs. Completion of the first of two locomotives for the train is expected in February of next year. Testing of the prototype coach is taking place on Canadian National lines in Quebec.

The $2-million LRC project is a joint venture of Alcan Aluminium Ltd. of Montreal, Dominion Foundries and Steel Ltd. of Hamilton, and MLW Industries Ltd., a division of MLW-Worthington of Montreal. The Federal Department of Industry, Trade and Commerce is sharing half the cost through its Program for the Advancement of Industrial Technology (PAIT).

The LRC locomotive, with its combination of streamlining and low weight, is designed to power the train to top speeds in minutes. Two units, one at each end of the train, with six coaches in between, are expected to reach a speed of 120 mph in four minutes. With a 1-10-1 train, 120 mph could be reached in seven minutes. The locomotive utilizes the fully proven Alco 251-V-12 series 3000 hp diesel engine driving a traction alternator and mounted on a new-design box section depressed centre frame, achieving a low overall height and a low centre of gravity. Weight of the locomotive will be around 180,000 lb., compared with 300,000 lb. for a conventional unit. Fuel consumption level is about 0.38 pounds per horsepower hour. The locomotive body is of welded aluminum alloy construction and the locomotive cross-section matches that of the coaches. The use of a standard coupler on the front end will permit coupling to existing conventional equipment. Both the locomotives and coaches are independently supported on two axle trucks, and are equipped with automatic couplers, permitting the changing of a coach within 15 minutes.

The electrical system for the LRC train is being manufactured by Canadian General Electric.

Alcan's efforts have been concentrated in overall design with particular emphasis in designing the LRC coach that makes conventional coaches look like boxcars. The LRC coach has a stiffened stressed-skin, welded aluminum alloy shell. It is a standard 85-foot length and has a capacity of 30 to 80 passengers depending on the seating layout. The coach utilizes a monocoque construction, in that the strength is built into the walls and replaces the conventional construction of a centre sill running down the middle aisle. This results in a lighter and stronger coach, particularly resistant to side collisions.

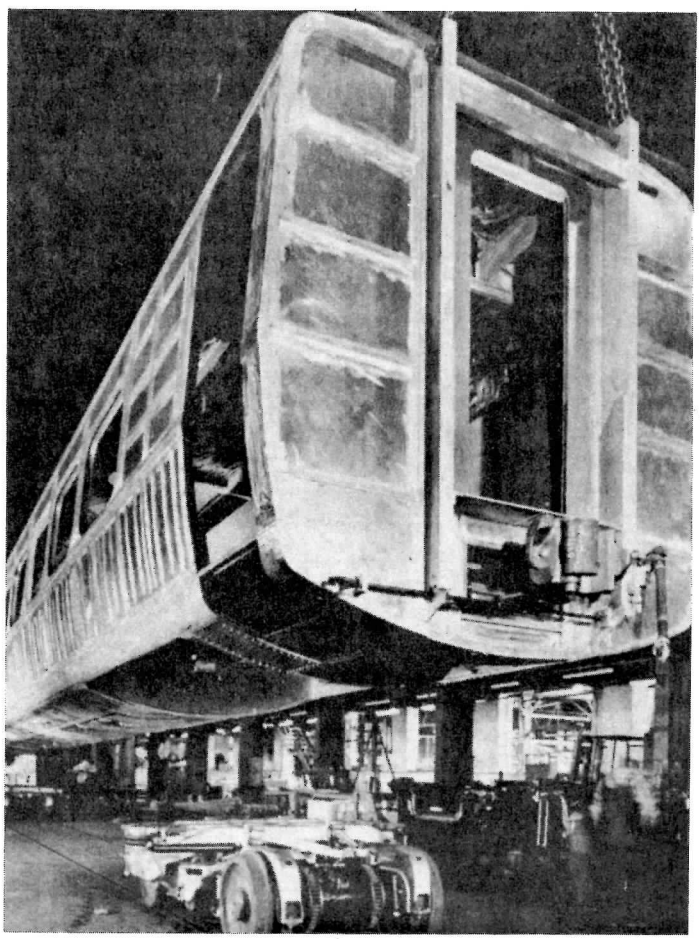
The coaches are fully air-conditioned, slightly pressurized and electrically heated. Power input is converted into alternating current. The interiors of the coaches are effectively soundproofed and furnished to a high standard of comfort. The seats installed in the prototype coach are contoured to fit the shape of the body.

Passengers riding in an LRC coach may find the ice cubes in their glasses taking curves as jiggle-free as are their stomachs. A banking system in the train's suspension system, designed by Dofasco engineers, physically tilts the coach some 14° on curves to straighten out curves. The banking system is hydraulically-driven and acts independently of the motions of the coach it controls. Preliminary tests of the banking system were successfully completed at Dofasco's foundry division in Hamilton late in May. Use of the banking system will permit speeds up to 40% faster than conventional equipment. The next step will be the construction of the banking system for the locomotive. Final designs are expected to be ready by the end of August, following a detailed analysis of the results of the test runs of the coach.

Although both major railways in this country are interested in the LRC, no firm orders have been placed as yet. The LRC train has been called "the most imaginative innovation in railroad passenger train design since the 1930's." The LRC system is designed to make substantial reductions to intercity schedule times while operating within the limiting conditions of present-day track structures. For example, the Toronto-Montreal train, with a three-hour travelling time each way, will make the round trip between the cities three times a day.

The LRC train concept should prove to be a highly exportable item of Canadian design and technology, especially to Europe where railway transportation is extensively developed. Designs incorporating European and U.S. standards have already been worked out.

# LRC



The LRC prototype coach is lowered onto its Dofasco trucks on the erecting floor in the MLW-Worthington plant in Montreal. (MLW-Worthington)

# EQUIPMENT NOTES

* CP Rail is currently installing combined Locotrol, Speed Log and Pace Setter, and unit train supplementary brake features to a total of 24 MLW 3000-hp diesel units presently operating in coal unit train service on the Pacific Region. The conversion of the units began early in August and will be completed before the end of this year. A tabulation of units involved in the conversion follows:

Locotrol-equipped units requiring Speed Log, Pace-Setter Master and Grade Balancing Brake: 4570, 4571, 4572, 4573, 4574, 4575, 4576, 4577, 4578, 4579, 4580, 4581.

Speed Log and Pace-Setter Master equipped units requiring Locotrol and Grade Holding Brake: 4550, 4551, 4552, 4553, 4554, 4555, 4556, 4557.

Pace-Setter Repeater equipped units requiring Locotrol, Speed Log, Pace-Setter Masters, Grade Holding and Grade Balancing Brakes: 4513, 4514, 4515, 4516.

CP Rail is also converting three FM C-line B units into Robot mid-train control units for use on four additional coal trains. Work on units 4449, 4452, and 4454 is underway at Angus Shops.

* Algoma Central has purchased three 2200-series coaches from CP Rail: 2244, 2254, and 2265.

# PASSENGER TRAIN NEWS

* The Canadian Transport Commission is currently sifting through some 231 briefs on the integration of transcontinental passenger train services, submitted in response to the Commission's call for briefs from interested parties last May. The commission is expected to call for public reaction on a final integration proposal, although no dates have been set for public hearings.

The integration--or rationalization--of the two services has been undertaken because the two trains together lost a total of $30-million in 1969. The two services have been declared uneconomic by the CTC and eligible for up to 80% subsidy of losses by the Federal Government.

One of the recurring themes in the briefs submitted to the CTC is a proposal to reduce service in winter while maintaining the same general daily service on both The Canadian and the Super Continental in the summer months. Under this plan, there would be transcontinental service six days a week out of Montreal, Toronto and Vancouver in the winter. The Super Continental and The Canadian would each operate three times a week. This would reduce service, as both trains now operate daily. It would mean that the main centres served by both railways--Montreal, Toronto, Winnipeg and Vancouver--would have daily service in the winter but transcontinental trains would pass through other municipalities only three times weekly.

Another proposal frequently suggested is that the duplication of CN and CP Rail services from Toronto and Montreal should be eliminated.

* CP Rail has applied to the Railway Transport Committee of the Canadian Transport Commission for permission to drop the second RDC car on its Toronto-Havelock service except on weekends, and also to increase fares. The requests were sent in a letter dated July 28th. CP Rail indicated in the letter that the number of people using the service is declining, and "appears to have dropped below the level of 1970 traffic." The second car "is having a very considerable effect on the cost of operating the service, and the set impact of declining revenues and increased costs will very likely result in a sharply increased loss for 1971." The second car was added to the consist last winter on orders from the CTC in response to complaints by commuters that the train was overcrowded.

CP Rail has asked for consideration being given to an increase in fares on the service. The railway says a fare increase "can now only be implemented in conjunction with CN to avoid worsening our competitive position. We would suggest that a meeting be convened to discuss the appropriate fare levels."

* Pacific Great Eastern Railway has leased from Morrison Knudson five Bangor & Aroostook Railroad diesel road switchers: GP7 75, and GP9's 76, 77, 79 and 80. The units were delivered to CP Rail at Brownville Jct., Maine on July 23rd and worked their way west to Vancouver for delivery to PGE.

* Canadian National has placed an order with General Motors Diesel Ltd. of London for 15 additional SD40 road locomotives in addition to the ones currently on order. The units will be numbered 5226-5240 and will be delivered late this year, and will be assigned to Montreal Yard.

* Grand Trunk Western road switchers currently used by CN in Southern Ontario include the following: 4427, 4429, 4431, 4437, 4440; 4907, 4910, 4918, 4921, 4922.

* The sale of five historic pieces of railway rolling stock to the Whistle Stop Railway of Romeo, Michigan for $1.00 each plus shipping charges, by the London Public Library Board appears to have been averted. The collection includes L&PS passenger car 4, electric locomotive L-2, a boxcar and caboose from the L&PS, and former UCRS private car 13 "Nova Scotia". The announcement that this equipment might go to the United States brought in $2500 in donations to keep the equipment in Canada. The London Board of Control offered to match the contributions and sent the idea on to London City Council for a decision.

* Canadian National announced July 22nd the restoration of passenger service from Toronto to Chicago through Windsor and Detroit. Passengers may now travel to Chicago by train, using CN services to Windsor, travelling by bus to Detroit and then use Amtrak service (on Penn Central) to Chicago. Amtrak restored passenger service between Detroit and Chicago on July 12th. This allowed CN to resume its Windsor-Detroit connections.

* A study is currently underway in the Metropolitan Toronto area and surrounding region, aimed at providing a 'jet-age' commuter rail service for the Greater Toronto region. The study is an undertaking of the Canadian Transport Commission, and it is headed by Dr. Richard Soberman, Chief of Research for the CTC (Dr. Soberman has been appointed Director of the Urban and Community Studies Department of the University of Toronto and will assume his new post in September).

The Province of Ontario and Metropolitan Toronto are cooperating with the CTC in the study. Of the 40 rail lines in the area, 12 are considered suitable for commuter service. As envisaged, the Metro Commuter system would feed like the spokes of a wheel into the new Metro Transportation Centre planned for downtown Toronto. The system would tie in with TTC rapid transit and bus services plus any other outlying public transit services.

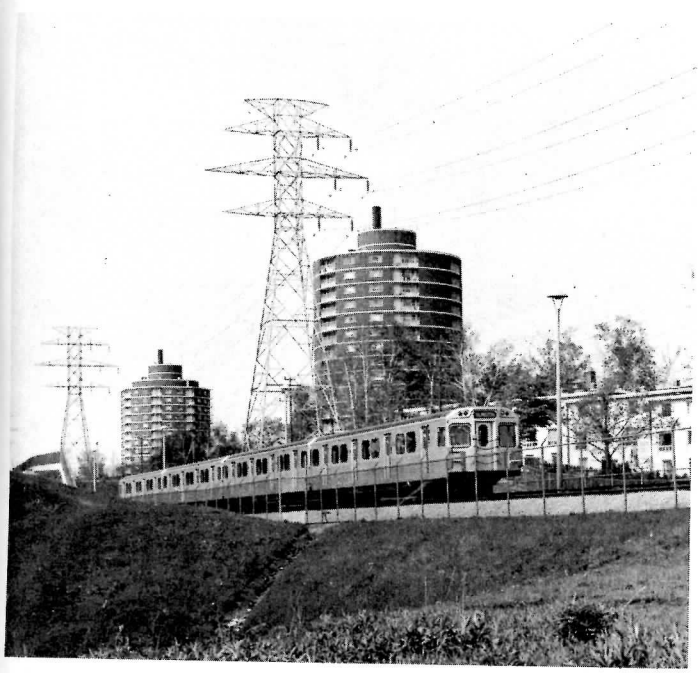
It is expected that the results of the study will be known by late fall, and what the recommendations of the CTC will be as to what railway lines would be suitable for GO Transit type commuter services.

The CP Rail/TH&B/PC Dayliner service between Toronto and Buffalo is now the only international rail connection left between Canada and the United States. The two-car train is shown in Buffalo's Central Terminal, with a few passengers detraining. (Robert Lampkin)

# SCENES OF TORONTO'S SUBWAYS


The rapid transit era in Toronto began during World War II, when the TTC drew up plans for a subway system consisting of two routes, one on and adjacent to Yonge Street, and a trolley subway line along Queen St. On January 1, 1946 voters in Toronto gave their approval to the rapid transit proposals, and the TTC began serious planning for the Yonge St. Subway, the more urgently needed of the two lines. On September 8, 1949, the first shovel of earth was removed from Yonge St. at Wellington St. in a special ceremony. After that construction was in full swing, with scenes such as this view of Yonge St. looking south to Queen St. in June, 1950, quite commonplace (Lewis Swanson). In this scene, steel piles have been driven at the sides of the street, and the roadway has been partially excavated to allow for relocation of utilities and placement of girders for decking, which is underway in the background.

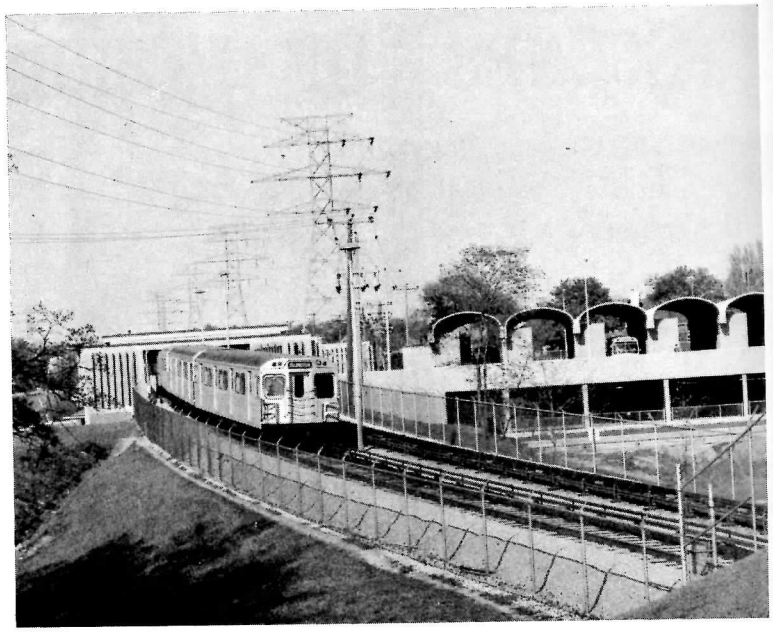
# ALBUM

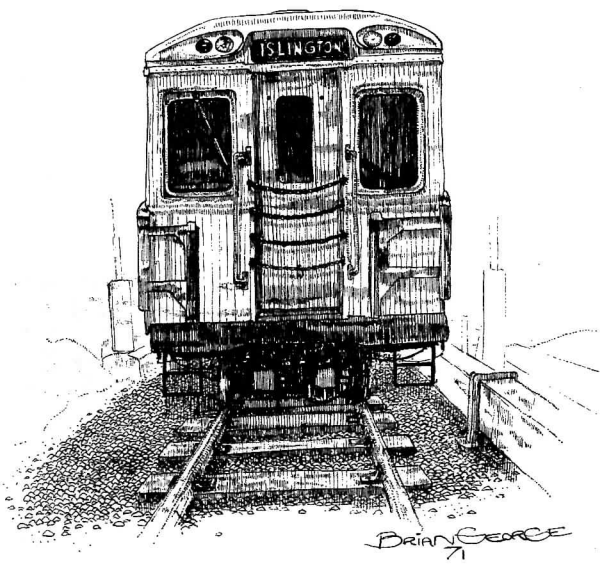



[Above] The original Yonge Subway cars built by the Gloucester Railway Carriage & Wagon Works in classes G-1, G-2, G-3, and G-4 have served the TTC well over the past eighteen years. A six-car train of G-class cars heads north on the open cut right-of-way at Imperial St., just north of Davisville Station. In the background, one can see the Canada Square development over Eglinton Station; one office tower is open, the second is under construction.

[Left] A four-car train of H-1 cars has just left Warden Terminal, the eastern terminus of the Bloor-Danforth Subway in Scarborough Borough, and is proceeding westward along Toronto's country subway line--the Bloor-Danforth Subway Eastern Extension. This is the newest stretch of subway line to be opened in Toronto; first public use being on May 11, 1968.

[Both photographs--Robert McMann]






VIEWS OF THE TTC'S BLOOR-DANFORTH SUBWAY EXTENSIONS

[Upper Left] In this aerial scene, a four-car train is approaching the Pharmacy Avenue overpass on the eastern extension. In the background is the Fir Valley Court pedestrian overpass which leads into Byng Park. (John Thompson)

[Upper Right] A westbound train leaves the Victoria Park Station on the eastern extension. Since this photograph was taken in May 1970, a new apartment/town house development has been constructed on Victoria Park Avenue, immediately across the street and northwest of the subway station. People living in this development have direct access to the subway station via a covered pedestrian overpass over Victoria Park Avenue. (Robert McMann)

[Lower Left] A westbound train is seen on the elevated open section between High Park Station and the Kennedy Park portal on the western extension. High-rise apartment towers block the horizon. Some of these buildings were put up and occupied by tenants even before the subway extension was completed, attracted to the area by the promise of dependable rapid transportation. (Ted Wickson)

[Lower Right] A four-car Hawker train has just left Old Mill Station and is about to cross the Humber River. In the background can be seen the ruins of the old grist mill which gives the subway station and the apartment-hotel-restaurant complex its name. This is one of the most scenic locations on the Toronto subway system. (Robert McMann)

Very rarely seen by patrons of the TTC's fine subway system are units of the second-generation work equipment fleet. There are six pieces of equipment, consisting of platform maintenance car RT-10, locomotive RT-12, flat car RT-11, and crane car RT-13 (all units built new in Japan--the only Japanese-built rapid transit rolling stock on the North American continent), as well as the two-car PCC rail-grinding train RT-14/RT-15 (built by TTC forces).


[Left] Platform maintenance car RT-10 poses at Greenwood Yard. Nicknamed "Tokyo Rose", this car prawls the subway system late at night (after 2210 hours), collecting refuse at the stations. (TTC)

[Above] TTC's new PCC rail-grinding train RT-14/RT-15 keeps the rails smooth and free of corrugations, in order to give a smooth ride to the subway patrons. The two cars are seen inside Greenwood Shops on a UCRS inspection tour March 6, 1971. (Robert McMann)

## all about TTC's new

# TRANSIT CONTROL CENTRE

by John Thompson and George Meek.

In November 1969 an event took place on the Toronto Transit Commission which passed unnoticed by most of the travelling public, but which represented a considerable impact on operations of that august transit body. This occurrence was the second phase of inauguration of unified signal and switch control and centralization of communications, from a new Transit Control Centre located in the Hillcrest Administration Building on Bathurst Street in midtown Toronto.

The desirability of such a facility became apparent to the Transportation Department and the Subway Construction Branch of the TTC following the opening of the Bloor-Danforth Subway from Keele to Woodbine in late February 1966. At this time the Yonge line was controlled from a tower at Davisville Station, coming into use with the opening of the Yonge Subway in March 1954.

The desirability of such a facility became apparent to the Transportation Department and the Subway Construction Branch of the TTC following the opening of the Bloor-Danforth Subway from Keele to Woodbine on February 26, 1966. At this time the Yonge Subway line was controlled from a tower at Davisville Station, coming into use with the opening of the line on March 30, 1954.

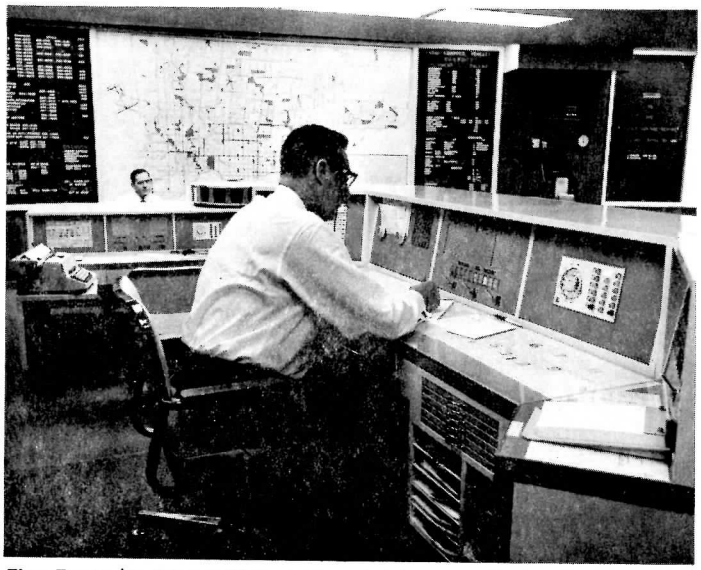
When subway service commenced on the University Avenue line on February 28, 1963, a new tower situated at St. George Station came into use, controlling traffic on the Union Station-St. George portion. (It should be mentioned that the term 'tower' is borrowed by rapid transit systems from railroads, whose interlocking towers, such as Scott Street tower in Toronto, are familiar to railfans. However, in the TTC's case, the so-called towers are simply separate rooms either above or below ground at various stations on the rapid transit system.)

The new facility at St. George served to control the initial Bloor-Danforth line, and, with the addition of two new sections to the panel, handled the Islington and Warden extensions when they came into operation on May 11, 1968.

Until the opening of the University Avenue subway, crossovers at Eglinton and Union Station were controlled from Davisville tower by a timing mechanism. This device consisted of a blackened strip of 35 mm film with holes punched in it, running in an endless loop over rollers driven by a clock motor. A light shining through these holes hit a photoelectric cell which activated a relay to throw the switches and turn the signals green at Union Station and at Eglinton.

After February 1963 one half of the scissors crossover at Union Station was removed. The TTC tried a six-month experiment of integration of all subway services on the Bloor-Danforth and Yonge-University lines after the Bloor-Danforth line opened in February 1966. Independent operation of the lines resumed on September 4, 1966. Service on the University Avenue portion of the Yonge-University was cut back to Union Station weekdays and Saturdays after 9:45 p.m. evenings and all day Sundays and holidays starting June 23, 1968.

Until the opening of the Transit Control Centre, Davisville tower continued to control the interlocking at Eglinton, and assumed control of the crossover at Union Station during the hours trains were cut back at that station.



The Transit Controller sits at his consol in the Communications Control Room. This consol is raised 18" above the floor so that the Controller can monitor the situation at the other control positions in the room, in a few seconds scan time. Note the headpiece the Controller is wearing; very light in weight and unobtrusive, it is a product from the U.S. space program.
(Toronto Transit Commission)

This is the Communications Control Consol in the Transit Control room; these men have instant access to police and fire departments, and EMO. In the background one can see the wall map of Metropolitan Toronto and all TTC routes, and listings of frequently called numbers.
(Toronto Transit Commission)

Light-manual route setting control panels were installed at Union Station and at Davisville tower. This is a manual override system which at Union Station consists of a panel set in the station wall approximately 62" by 82" in size, having two key-operated pushbuttons and a pair of blue indicating lights denoting the panel's location. By pushing these buttons, which operate the signals and crossovers, a platform inspector can alter the normal sequence and timing of train reversals at these termini.

Auxiliary control panels in off-platform rooms were installed at Keele and Woodbine to control the crossovers and signals in case of delays and emergencies. Similar facilities exist for the crossovers at Islington, Greenwood and Warden, and for the three track sections between Ossington and Christie, and Broadview and Chester. The panels at Keele and Greenwood are especially useful for providing local control of the yard approaches at these locations.

The idea of a unified control centre had been under consideration by the TTC as far back as 1961, but the plans were shelved for a variety of reasons, namely, the lack of the necessary funds, space in which to locate the facility, and a firm decision as to whether the centre was immediately required or not.

By the autumn of 1966 the first two stumbling blocks had been overcome. As for the need, it was apparent at this stage that although control of the subway system from St. George and Davisville towers was reasonably efficient, unnecessary delays were resulting from misinterpretation of signals, or breakdown of communication between signals, power, and operating personnel, who were located in different areas.

Realizing that a centrol control of all signal interlockings from Hillcrest was being planned, and that from a practical point of view this could only be accomplished by the code transmission link, it was decided to have the four interlockings in the east-west extensions controlled temporarily from St. George tower by code to enable maintenance personnel to gain some experience with this type of system.

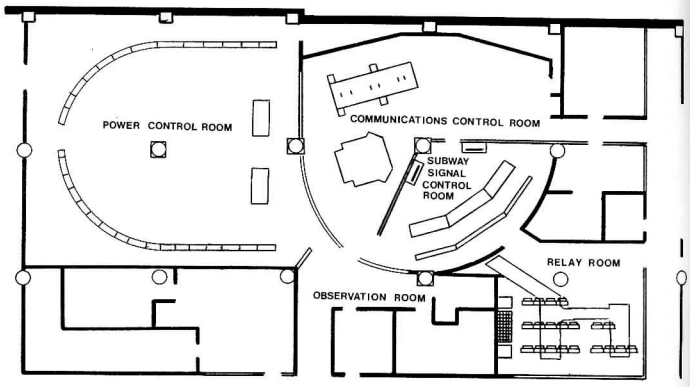
By definition, the code transmission link is a system whereby, instead of having a cable containing a wire for each individual signal light and switch position, which might amount to 50 wires for a small interlocking panel (e.g., Ossington), which would result in cables containing thousands of wires heading into Hillcrest, a system of positive and negative electrical pulses in various combinations is used to select the switch or signal to be operated or lit with the same effect that a phone number is called on a dial phone. This requires a much smaller number of wires (2 or 4) and does not generally require the addition of more wires as subway extensions are opened.

1921 1971
50 YEARS OF SERVICE

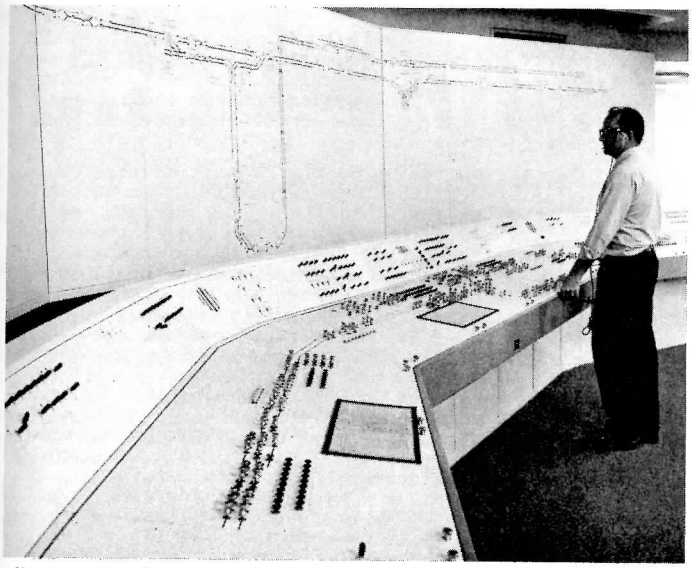
The Central Control Panel at Hillcrest provides the same indications and controls as the zone control panels at Davisville and St. George. These latter facilities are now closed, but their equipment is essentially intact, so that they can be used in the event of an emergency.

The Hillcrest panel has been designed to embrace future indication and control of the planned Spadina and Queen rapid transit lines. The control of the Yonge Subway northern extension, presently under construction, will be consistent with the present control concept. A zone control panel similar to that at St. George will be located at the north end of Eglinton station, and controlled by code from Hillcrest. This type of panel is, essentially, a device whereby the movement of trains through the subway is indicated by lights on the board as they pass each signal; the train is shown by a lighted strip between a series of lights.

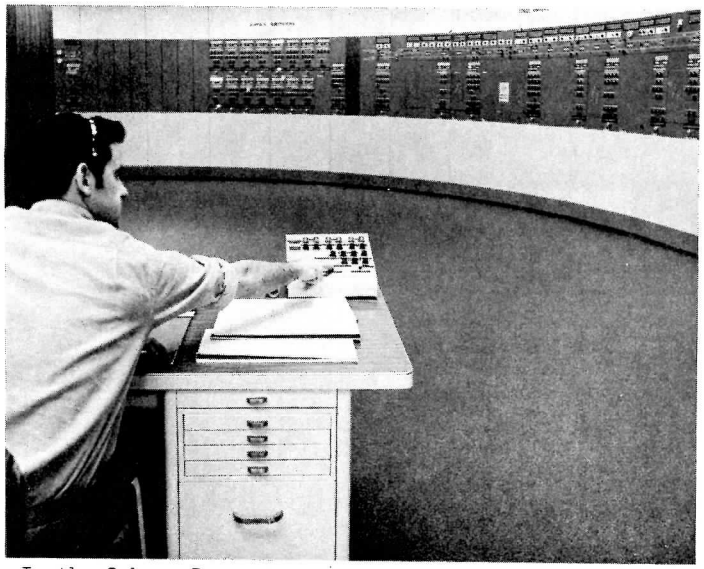
On the North Yonge Extension the stations are spaced a mile and a quarter apart. Crossovers and the necessary signals for reversing trains are located at each station, although only those at Sheppard, and later at Finch, will be used under normal operating conditions. The aforementioned facilities will exist at Lawrence and York Mills stations because of the third track (for storage) that will be constructed at these stations, and that will permit the turnback of subway trains in the event of an emergency.




Layout of TTC's New Transit Control Centre at Hillcrest.



We see the "towerman" at his panel in the Subway Signal Control Room at TTC Transit Control. He can follow the movement of all subway trains on the illuminated panel in the background. (Toronto Transit Commission)



In the Subway Power Control area one man monitors and can control the entire electrical power requirements of the TTC. (Toronto Transit Commission)

The four interlockings--Lawrence, York Mills, Sheppard, and Finch--will be controlled by direct wire from Eglinton. This will provide the facility that, should service delays or emergencies so dictate, Eglinton could control the line to the north.

The basic philosophy behind the need for a unified transit control was that what affects the subway affects the surface system, and vice versa. Among transit operators, the TTC may well be unique in this approach. Most other properties operate the two systems under separate control, an example being that of New York City. On the transit system of the metropolis of the Empire State, two-way surface radio systems have recently been installed and made operational on the buses. However, they are completely separate from the subway systems, to the extent that each of the 21 bus divisions has separate control of the vehicles in their particular area.

The TTC Transit Control Centre, although all in one location and designed for the next 25 years, is laid out in four sections. These are: Communications, Supervisory Power Control, Subway Control, and two-way Surface Radio Systems, the latter also having space allotted for future expansion. The floor area is 5860 square feet, of which 3270 square feet is covered with broadloom. This area also contains the Hillcrest switchboard, a modern lunchroom, a supervisor's office, and the equipment and relay rooms.

For ease of operations, it was felt that all of the necessary facilities must be together on each console, including radio, wayside phones, Bell Telephone lines, and the public address system. If this extremely technical operation could be achieved, a high degree of efficiency could be expected. To operate a system of this type, it was necessary for the personnel to be furnished with a single headset.

The headset itself is probably the most important piece of equipment in the Control Centre from an operations point of view. This unique device weighs only one and one half ounces, and possesses a highly sensitive mouthpiece no larger in diameter than a soft drink straw, and about half as long.

The area chosen for the Control Centre site is on the third floor of the Hillcrest Administration Building. Originally used as a material storage area, this location has been transformed by a careful choice of colour scheme, tiling, lighting, and broadloom into an attractive place in which to work.

The operation of the Transit Control Centre is under the direct supervision of a controller whose consol is situated on a raised dias eighteen inches above the floor to provide him with a better view of the entire centre, enabling him in a few seconds scan time to acquire an up to date picture of the current state of operations. This man can monitor all calls to the dispatchers' consoles if he so wishes.

The Transit Control Centre is divided into three basic areas--(a) the Communication Control Area, (b) the Power Control Area, and (c) the Signal Control Area.

The Communication Control Area is actually the hub of all subway and surface operations and provides facilities such as:

* telephone system linking all divisions;
* public address system connected to all subway stations and platforms, including tape recorder for repeat broadcasting of messages;
* wayside telephone system to all subway trains;
* direct telephone lines to Metropolitan Toronto Police headquarters and the Emergency Measures Organization (ambulances, Civil Defence);
* burglar alarm indicating system for divisional offices, subway, and other locations;
* immediate liason with Power Control and Signal Control.

The Power Control Area provides facilities such as substation supervisory control (subway and surface--breakers and rectifiers), and subway supervisory control (fans, pumps, emergency trips, burglar alarm and sprinklers).

The general concept of the supervisory operation is diagramatic blackboard display controlling into master cubicle. The supervisory systems include solid state, tube and relay equipment.

In the Signal Control Area, the central control panel and panel recorder cabinet have been painted to match the colour scheme of 'champagne' and 'olive green' which is used throughout the centre. The floor is covered with olive green broadloom and the lighting in the area offers maximum flexibility. Directly above the control console are five recess incandescent pot lights. Just above the indications panels are four foot fluorescent strip lights combined with a brightness lens to provide a wall washing light effect. Located near the centre of the room are two four-foot six-lamp oval fluorescent fixtures for general lighting. All of these fixture types are controlled-separately by 'dimmer switches'.

The signal control panel takes the form of a separate indication and control console. The indication console is eight feet high and is constructed in three ten-foot sections. The indication face plates are designed in modular form and the illuminated track diagram and associated signals and switches are displayed on this panel. the panel embraces all of the existing TTC subway operations, plus the North Yonge Extension with provision to add the future Spadina and Queen lines. The signals are exceptionally sharp and can readily be seen from one end of the panel to the other. This was achieved by applying a higher voltage to the signals as opposed to the track indications. The signal levers are the self restoring type and colour--coded to afford visual separation of adjacent interlockings. Located at each end of the control console are duplicate push-buttons necessary to connect different telephone systems to a common head set worn by the panel operator.

All the indications and levers re the indication and control panels are prewired out to plug couplers in the base of the console. The multi-conductor cables connecting the consoles to the relay racks were prefabricated and the relay racks were also prewired. This solved many problems during the installation which was done by TTC forces.

A special cabinet was designed to house six event penrecorders which record various signal, track circuit and switch functions at the various terminal interlockings. Six solid state coding systems with solid state carrier link provide the necessary controls and indications for the Davisville-Eglinton interlocking at Davisville station, and the Bloor-Danforth-University interlocking consolidation at St. George station. The code system is of the Duplex type and operates at a 600 data bit rate for controls and a 1200 bit rate for indications.

Existing cables provide the code link necessary for the control. A primary route followed an existing duct run from Hillcrest to Asquith substation and then back to St. George and a secondary route in existing cables run from Hillcrest to Christie station and then east to St. George. Only one route was used between Asquith and Davisville. The tranmission frequencies used are 7.3 kh for control and 4.5 kh for indication.

Primary source of power at Hillcrest is 120/220 volt 60 cycle single phase AC. A battery and battery charger operate the coding system, application circuits and a solid state inverter. The inverter is used for standby power for the panel indications. Three Variac transformers mounted under the desk of the control panel provide lamp dimming for each of the three sections of the indication panel.

What has the operation of the Transit Control Centre at Hillcrest brought the TTC in the way of benefits? It must be obvious that due to the consolidation of interlockings, a monetary saving is realized because less operating personnel are required. The most important advantage has been the minimizing of delays. Since the control centre has been operational, lengthy delays caused by incidents occurring in the subway have been cut in half, and this is only because the people who are instrumental in minimizing the delays are all under one roof. In conclusion, the equipment and operating facilities described in this article are in line with the latest developments in transit control systems and provide a safe and efficient means of operating a service which will meet the present and future needs of rapid transit in Toronto.

## ALL ABOUT TTC'S MOBILE SUPERVISORS

Since 1942 the Toronto Transit Commission has employed a system of two-way radio communications for the control of supervision of passenger services by means of a fleet of radio-equipped traffic supervisory automobiles, emergency trucks and other service vehicles. The Mobile Supervisors are an important part of the radio communications network and carry a major responsibility for keeping TTC services operating smoothly and efficiently.

The present radio-equipped fleet of vehicles now numbers 54 units and includes the following:

- 13 Mobile Supervisory cars
- 3 Mobile Supervisory Station Wagons--Special Services
- 5 streetcar equipment maintenance/emergency trucks
- 7 bus & coach equipment maintenance/emergency trucks
- 7 electrical maintenance tower trucks
- 16 plant service trucks
- 3 Treasury vans

The radio broadcasting station presently operates on a fixed frequency of 151-925 megacycles with a main station output of 50 watts (vehicle output 30 watts). Station call of XJH-80. The transmitter and aerial are located at Davisville Head Office building.

Control and dispatching of the radio fleet is handled through the Transit Control Centre. The personnel manning the Transit Control Centre are under the direct supervision of a Controller, responsible for the direction of Mobile Supervisors and others on surface and subway routes during any irregular or emergency conditions. The Transit Control Dispatcher mans an operations desk, in front of which is an 8' by 16' wall map of Metropolitan Toronto and TTC routes. Flush with the desk top are telephone key boxes with the various direct lines which provide contact with private street phones, divisions and other operational sections.

Emergency calls, as received, are recorded and time-stamped on message slips and issued immediately by radio to the Mobile Supervisors in the districts affected and to the service trucks which may be required to assist, and delays to the service are recorded by Dispatchers. The message slips are filed for record purposes.

The 240 square miles of Metropolitan Toronto are laid out in a semicircle on the north shore of Lake Ontario. This area, within which the TTC is responsible for all transit service, is 'patrolled' by Mobile Supervisors of the Transportation Department twenty-four hours a day. Through the Transit Control Centre at Hillcrest, they are directed to accidents and service delays of various types. They assist in the supervision of passenger services at large public gatherings in parks, stadiums, arenas, and in the general supervision of TTC services, schedules, manpower, equipment and other facilities.

To facilitate effective supervision, the Metropolitan area is divided into four districts--Central, West, North, and East. These are large areas of responsibility, within which divisional traffic inspectors, in radio cars or on foot, are in charge of the various passenger carrying lines.

A Mobile Supervisor in a radio car is responsible for the overall supvervision of each of the four districts, with four additional radio cars patrolling the outlying sections of the West, North and East districts to cover the many bus routes in these expanding suburbs. Eight radio cars are on duty on a two-shift basis during the period from 0600 to 2400 daily, in specific patrol areas. Two radio cars are on duty after midnight when the city is divided into two districts for supervision of the reduced passenger services operating at night. On Sundays and holidays, in keeping with the lighter traffic and service, the number of supervisors is also reduced.

The Mobile Supervisors are experienced operating men promoted from the ranks of the divisional street inspectors. Within their assigned areas, they keep services moving efficiently by reporting on schedule requirements, by pinpointing operating problems and areas of severe congestion, and recommending corrective measures where necessary. They work in close cooperation with Police, Fire and other Utilities personnel. In the course of their shift duties, they serve as a liaison between the Transportation Department head office, the operating divisions and the divisional line inspectors. Regularity of service, which is a necessity in public transit is the product of the collaboration of these important supervisory groups.

To assist the Supervisors in their work, the radio cars are equipped with certain basic emergency gear, as follows: a heavy duty trouble chain, a specially designed wrecking bar, trolley wire pickup devices, a broom and wrenches. The Mobile Supervisors are issued personal tool kits, including pliers, screwdriver, assorted fuses, a flashlight and road marking chalk. The also carry keys for entrance to certain TTC properties in cases of emergencies after hours.

An operator who is experiencing difficulty of any kind while on his route on a streetcar, bus, trolleycoach or subway train, need only to call the Transit Control Centre to activate the network of emergency service.

A report of an accident, fire, vehicle breakdown, trolley wire break or other service disruption is flashed to all cars promptly. The Mobile Supervisor in liaison with the Transit Control Controller organizes the required emergency operations or diversion of service to bypass the trouble and expedites the restoration and maintenance of normal passenger carrying service.

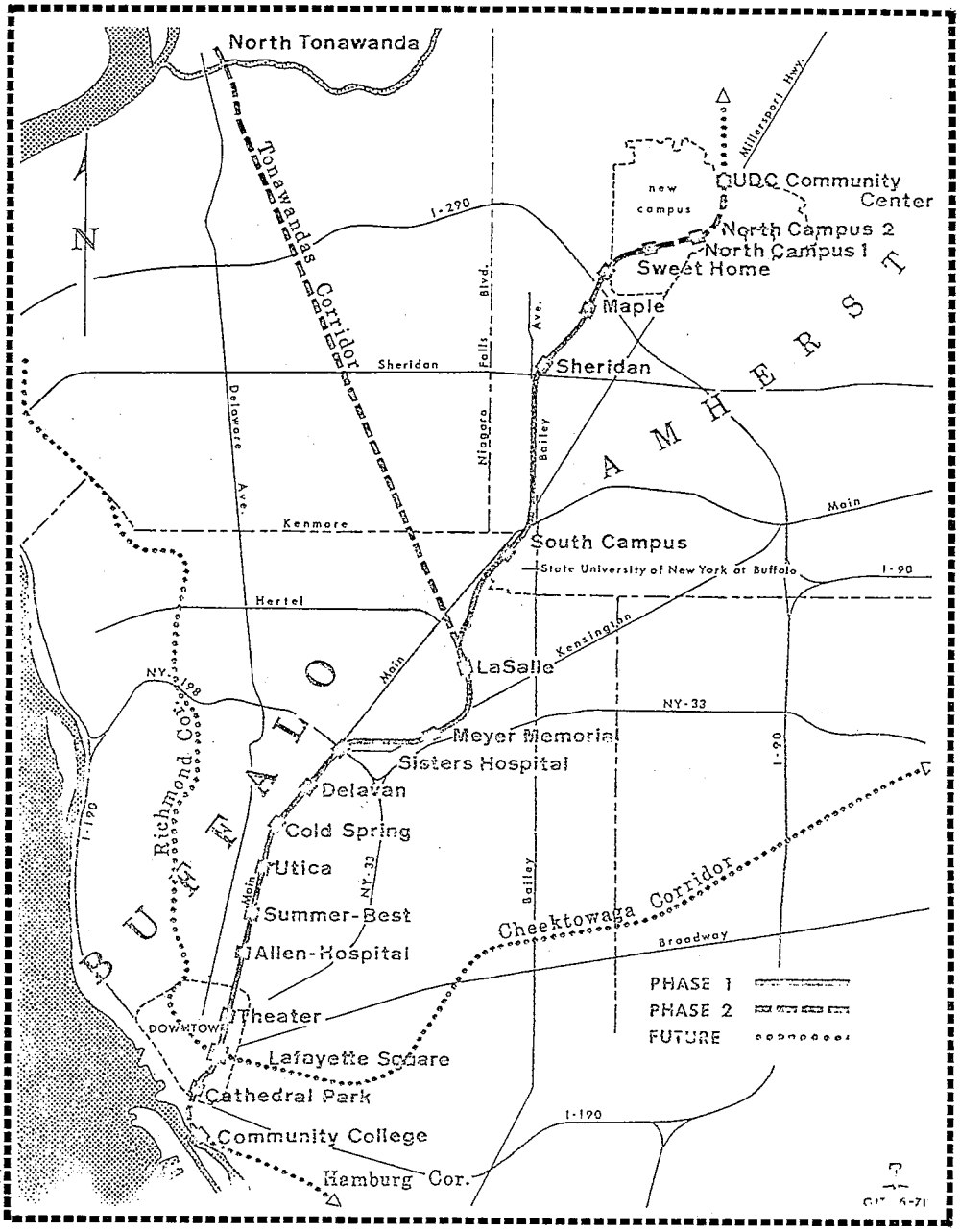
Perhaps in the near future the TTC may be able to be in radio communication with any of its 1500 buses. The Commission has suggested to the Province of Ontario that the installation of radio equipment in its 1500 buses be subsidized as part of a research project. The TTC is in the market for an electronics system that will track each bus and tabulate the number of its passengers, signal all breakdowns, delays and emergencies and allow communication between divisions, the vehicles, and Transit Control. No such system is in sight and TTC officials hope provincial initiative in transit communications could make the TTC and the Province of Ontario a world leader in this field. A real plum for any enterprising inventor!!!

# RAPID TRANSIT FOR BUFFALO

Fifty years ago, Buffalo, New York was the hub of a traction empire, with line radiating out to various points in the western end of the Empire State. The International Railway Company (under the management of T. E. Mitten) was the operator of the street railway system in Buffalo, Niagara Falls, and operated an interurban line out of Buffalo northeast to Lockport and Olcott on the Lake Ontario shore. In Lockport connections were made with the interurban cars of the Buffalo, Lockport & Rochester Railway for Rochester and points east. The IRC had just opened two years previously a high-speed line between Buffalo and Niagara Falls that was operated with a fleet of big center-door Kuhlman built interurban cars. A fleet of Nearside and Peter Witt cars provided most of the city service in Buffalo, assisted by older equipment. One other interurban line entered Buffalo from the south--the Buffalo & Lake Erie Traction Company--that ran along the south shore of Lake Erie to Erie, Pennsylvania. Also controlled by the IRC was the Niagara Great Gorge Railway.

Alas, the scenes common in the electric railway industry were all too common in the Buffalo area. Service curtailments, abandonments, and bustitutions were all too common. The IRC abandoned the Niagara Falls High Speed line on August 20, 1937 and the line to Olcott on October 30, 1937. The B&LE gave up the ghost on December 1, 1932, five years earlier. Buffalo itself said goodbye to its last city car on the 1st of July, 1950.

Now, electric traction may once more make an appearance in Buffalo, this time in the form of rapid transit! A new mass transit authority--the Niagara Frontier Transportation Authority--has been established to operate public transit in the two counties on the Niagara Frontier. A Mass Transit Study was undertaken, and it was recommended that the NFTA acquire equipment and facilities of three major privately owned bus companies in the region and some of the equipment and facilities from four others. The unified bus network would operate city and suburban transit services in the Buffalo-Lackawanna, Niagara Falls, Twin Cities, and Lockport urban areas, as well as all commuter bus services in Erie and Niagara Counties. Also proposed is a Metropolitan Transportation Centre in a two-block area in downtown Buffalo, and a new terminal in Niagara Falls.




Even more interesting for the traction fan, is the recommendation of the Mass Transit Study that the NFTA design, construct, and operate a rail rapid transit line in the Buffalo-Amherst Corridor. (See map.) Envisaged is a 12.5 mile line running roughly northeast-southwest within Buffalo and Amherst. The line would start in the downtown from a terminal near the former Lackawanna Terminal to a terminal in the Community Centre of the planned 'new community' to be developed in Amherst by the New York State Urban Development Corporation. On the 12.5 route, 3.9 miles will be in subway, 7.3 miles will be on aerial structures, 1.3 miles will be at grade, in open cut, or in transition from above ground to below ground. Including the two terminals, there 19 stations along the way, 8 in subway, 10 on aerial structures, and one on the ground.

The line would be built so as to allow its later expansion into a full regional network. The southern terminal at the Community College would be laid out so that the line could be extended southeast and south into Hamburg. The northern terminal would allow extension to the north. Provision is made for a junction just north of the LaSalle station so that a branch could be continued on the railway right-of-way into the Tonawandas. The layout of the Lafayette Square station provides for a future east-west subway that would form the nucleus of a line through the West Side to the Tonawanda industrial district, and a line through the East Side to and beyond the Greater Buffalo International Airport. The proposed network of feeder bus routes would be linked with the rapid transit line at most stations.

The technology to be used on the line has proven itself time again on other systems in North America--steel wheels on steel rails! The operating gauge will be Standard. Envisaged are electrically third rail powered trains of up to six cars 10-1/2' wide, 75' long, with seating capacities of 86 per car (the same loading gauge as for the TTC H-1 subway cars!), fully air-conditioned. Six car trains would operate on a two minute headway in rush hours, two car trains even seven minutes during the day and evening, and one two car train providing night service from 0130 to 0430 every hour. The cars would be conventional A-B sets as in Toronto.

For financing, design, and construction, the Buffalo-Amherst line is divided into two phases. Phase I covers the longest extent of line--between Cathedral Park station and North Campus I station. Phase II extends the line south to Community College station and north to UDC Community Centre station. The schedule suggested calls for final engineering/architectural design, relocation (of displaced families and businesses) and land acquisitions to be carried out through 1972 and 1973. Construction would begin on different segments of the line between spring 1973 and mid-1974. The earliest construction to be completed is scheduled to be between the South and North campuses of the State University of New York at Buffalo--late in 1975. The remainder of the Phase I portion of the line would opened to service by January 1977. Phase II would be designed during late 1975 and all of 1976, constructed during 1977 and 1978, and opened in January 1979. Right-of-way for Phase II would have been acquired at the same time as right-of-way for Phase I.

The cost of the Phase I portion of the line and the unification of the bus network is $256.7-million Funds to meet these costs are expected to come from two sources, $171.2-million from the U.S. Urban Mass Transportation Administration, and $85.5-million from the New York State transportation bond fund. The cost for the rapid transit line alone is estimated at $181.4-million. Of this, $23-million would be for design and land acquisition, $25-million for rolling stock, and the remainder for construction. Phase II, which would be separately and later financed, is estimated to cost an additional $31.4 million.

Enabling legislation to set up the NFTA and commence planning was passed earlier this year. At the crux of the issue at the moment is a vote on the state bond issue on November 2nd. A yes vote on this question would double the investment in this bond fund, and thus make certain the construction of this phase of the rapid transit project. The Buffalo television stations are solidly behind the rapid transit plans [last June they carried extensive coverage of the TTC subway system on their newscasts, plus interviews with TTC officials and Metropolitan Toronto officials.], as well as the Buffalo newspapers. A citizens group has been formed to pump for rapid transit--Area Committee for Transit (their pamphlet Rapid Transit is Coming carries a photograph of an eight-car train of TTC Gloucester cars northbound on the Yonge Subway south of Rosedale Station.)

Rapid transit can and will do for Buffalo the same benefits it has brought Metropolitan Toronto. Plans now are riding on the outcome of the vote in the November 2nd elections. Perhaps in five years transit fans from Toronto will be able to go to Buffalo and inspect and ride on the new NFTA Buffalo-Amherst rapid transit line.

RAPID TRANSIT

*THE COMING WAY TO GO!*



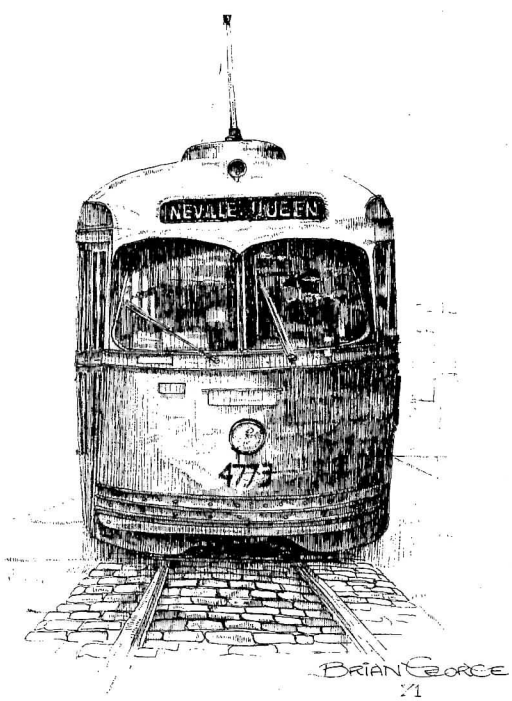
IRC Peter Witt car 124 rumbles across the intersection of Washington and Sycamore in downtown Buffalo, on route 24-GENESEE, June 1, 1939. (C. S. Bridges)

## ODE TO A QUEEN CAR

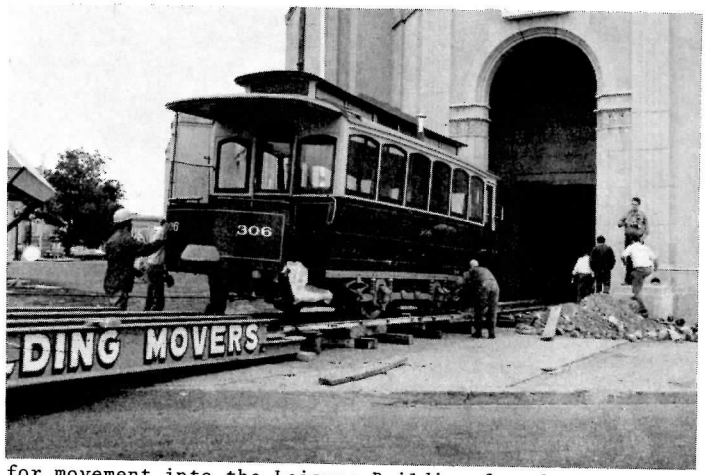
Up on the windshield is 7 run number,
At 4:31 he leaves Neville for Humber,
4:43 and the traffic's getting thicker,
Held at Connaught behind a Kingston Road Tripper,
4:48--there's a crowd at Broadview,
"Fares ready please, we've got to get through."
Parliament Street--watch that open switch,
Drives through smoothly without a hitch.
Crawls to Yonge Street ten minutes late,
Crowds three deep, eyes filled with hate
Pull away from Yonge at 5:21,
To get to Humber on time we've really got to run.
Fly across McCaul and the power goes "poof"
"Move to the rear, there's room on the roof."
With the pole back on we inch towards Bathurst
The sun is down and the traffic's at its worst.
After Ossington Avenue the crowds subside,
"Maybe he'll short-turn me at Sunnyside."
Get to Roncesvalles but no such luck,
"What a hell of a way to make a buck."
Hit the private right-of-way west of Parkside,
Foot to the floor, really give her a ride
Coast into Humber at 5:59,
Up goes Roncesvalles on the destination sign,
Pull in 'Roncy' with the rest of the bunch,
"Thank God--MU's will be on in a month!"

-- Roy Williams & Jerry Oldroyd.

[Written a few weeks before the inauguration of multiple-unit PCC train service on the QUEEN route, October 2, 1967.]



## CAR 306 COMES BACK TO TORONTO


TRC car 306 was moved to Toronto from the Museum of Science & Technology in Ottawa by Charles Matthews Ltd. on July 29th. These two photos show the car at the Canadian National Exhibition on the morning of July 30th for movement into the Leisure Building for the TTC's Golden Anniversary Display. (Left) A front view of the car on its float; (above) the car is slowly winched into the building. (Photographs--NEWSLETTER/Bob McMann)

# TRACTION TOPICS

Edited by John F. Bromley

* October 14, 1971 is the date scheduled for the start of work on the first new station of Montreal's Metro subway extension. The construction start would be five years to the day from the beginning of subway operations in Montreal. The east-west line and the north-south line were opened October 14, 1966.

The first site to be opened will be the Beaugrand station at the eastern end of the east-west line extension. It will include a garage and a repair shop, with eight 500-ft. long garage lanes, five surface lanes for minor repairs, a lane for washing trains, and a 2000-ft. test lane to try out high-speed trains before they are used.

The garage and workshop will cover some 220,000 sq. ft. and will be built entirely underground. It will be located under land which belongs to the corporation of Mont Saint-Antoine and the Quebec Department of Education. Construction will not require any demolition, and the land will be returned to its owners in its original state after the Metro work is completed.

Drilling and sounding work has been completed at 55 points on the eastern extension of the east-west line, and seven points on the western extension. An additional 46 points on the eastern extension are almost completed. Land surveys are completed on the eastern extension and have started on the western extension.

Initial expropriations required to start construction of the western extension have been ordered.

With the work undertaken so far on schedule, it will be possible to open the eastern extension of the east-west line in January 1976, and the western extension in June of the same year.

* Accidents have decimated the TTC's fleet of PCC cars once again. During the evening rush on August 20, 1971, class A8 car 4513 rear ended A14 class car 4768 at the southbound cemetary stop on Mount Pleasant Road. Just a few days later, a second rear end "at speed" collision occurred on the Queensway westbound at the Riverside underpass. Both cars were ex-Cleveland/Louisville class A12's, 4686 striking 4689. All four cars are severely damaged, but in the view of the recent statement of TTC Chairman Ralph Day that streetcars would continue to operate for many years, there is an excellent chance that at least three of the four cars will be repaired. Other cars in storage and not previously reported include 4369 (with fire damage) and partially-stripped 4733. Should the repair of all but 4768 be elected, fronts and rears of derelict cars might be used, as was the case with 4098 and 4052 several years ago. The front ends of classes A12 and A14 are remarkably similar, and the front end of 4369 could be used to repair 4513.

* The Ontario Government watered down its pledge to pay 50% of the capital cost of municipal subway systems, on July 14th. An amendment to its Highways Improvements Act, would permit ministerial discretion in reducing the provincial contribution if an outside agency such as the Federal Government participated.

If the Federal Government wished to contributed 25%, for example, the province could decide to pay 50% of the remaining 75% of subway construction costs.

In announcing his plan to put assistance to subway construction on an equal basis with road building, Premier Davis said the province would pay 50% of the total costs of subway construction including acquiring rights-of-way and rolling stock.

Liberal and NDP MLA's opposed the amendment but it was passed by a vote of 49/34. The bill as amended was ordered for third reading after four hours of debate.

Minister of Transportation and Communications Charles MacNaughton, who introduced the amendment, said the provision of ministerial discretion was necessary in case the Federal Government moved into the field at a high rate of subsidy, such as 90%.

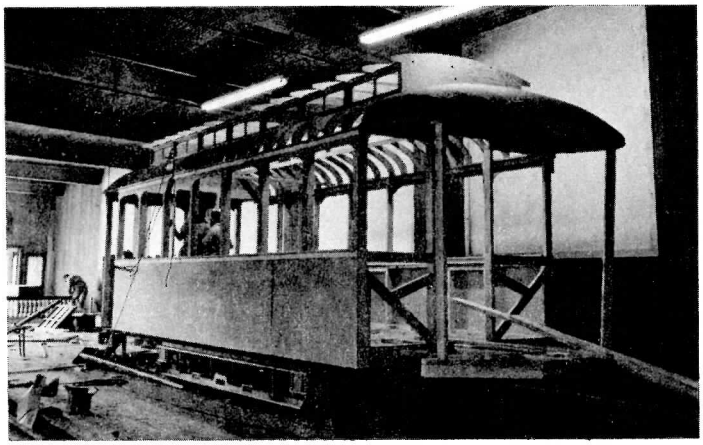
A spokesman for the Federal Government Urban Affairs Minister Robert Andras said that the government has no plans to subsidize Toronto subways. "I suppose anything is possible--snow in the Congo--but it's highly unlikely." He said the Urban Affairs ministry's role in big cities' rapid transit schemes would probably be confined to aiding experimental projects.

* Net earnings for the TTC in 1970 were down compared to 1969, yet passengers carried showed an increase to a new record. These facts were outlined in the Commission's Annual Report for 1970. Net earnings were $1,902,538, down from $4,130,100 in 1969. A record 323,616,632 passengers were carried last year.

The report went on: "The continuing rapid escalation of labour and materials costs is outstripping revenue from all present sources." Without some kind of financial assistance, the commission would have to raise fares every year or two "just to maintain the present level of service."

In an interview, Metro Chairman Ab Campbell said that it would not be out of line for Metro Toronto to put up $1-$2-million as a subsidy to the TTC to keep fares down. He said fares must be held at present levels so that the TTC can continue to build up its passenger volume. Before making any decision, Metro would have to learn the full details of the new systems of grants from the province to public transit.

TTC Chairman Ralph Day said he hopes the new grants would enable the TTC to forestall immediate fare increases but that he doubts that government grants can continue indefinitely to offset TTC costs. He said any fare increase hits hardest at the people on the lower end of the income scale, and "whenever there's a fare increase, a considerable number of people stop using the TTC. It's a major disruption because it hits people so directly. You pay every time you get on, not like other utilities where you pay every month or three months. For a lot of people that makes it something they have to take into account when they're budgeting week by week."



Workmen are hard at work erecting the replica of Toronto Railway Company car 838 in the dining room of the Old Spaghetti Factory restaurant on the Esplanade in downtown Toronto. Trolley fans are now able to have a meal aboard a "trolley dining car". (Mike Filey)

* A full-scale replica of an old Toronto streetcar has been erected in an old warehouse as the centre piece of a new restaurant. The Old Spaghetti Factory is the name of the restaurant and it is located in an old building on the Esplanade east of Scott St., immediately east of the St. Lawrence Centre. The restaurant opened early in August and has since been licensed to serve liquor with meals. Specialty of the house are spaghetti dishes, as low prices. The restaurant is open only after 5:00 p.m.

The streetcar is a full-scale replica of a Toronto Railway Company D-class car, and has been constructed for double-end operation (because of fire regulations in the building). The car is fully painted as a TRC car and bears the number 838. The replica was constructed by builder Gordon Woligrocki for restaurant owner Andy Pulos.

The Toronto restaurant is part of a chain--each restaurant featuring a replica of an old streetcar. Outlets are now open in Vancouver, Winnipeg, Seattle, Portland, and Tacoma. With the Toronto outlet open, work is underway on two more restaurants, one in Edmonton and one in Boston (will the Boston outlet have a replica of a BER Type 4 semiconvertible???).

Dinners at the Old Spaghetti Factory are inexpensive. Dinner for two with wine comes to around $5.00.

* Canadian National will be holding a Cornwall Street Railway open house day on October 9, 1971, to mark the end of electric railway operations in the City of Cornwall. Activities will include a runpast or parade of all serviceable equipment, free excursions around the system with freight motor 7 and a commuter car, and a presentation ceremony where freight motor 17 and the maintenance-of-way car will be presented to the City. Festivities will begin mid-morning and last until late in the day.

Electric switching operations in Cornwall more or less came to an end August 3rd, with diesel switchers taking over the switching chores. However one freight motor is still kept active for certain switching moves, in locations where the diesels cannot make the curves on the former CSRL&P system.

* In Pittsburgh, the PAT system will replace the 44-KNOXVILLE, 49-BELTZHOOVER, and 53-CARRICK carlines with buses on November 14, 1971. At the same time, one-way streetcar service through the South Hills Tunnel will begin for a period of approximately 14 months to allow paving and ventilation work that will eventually result in combined streetcar-bus service between South Hills Junction and Smithfield and Carson Sts. Temporary crossovers will be installed at both tunnel entrances to allow rail service to operate in the direction of maximum travel. In the morning, streetcars will operate inbound only through the tunnel while the afternoon and evening service will operate outbound. Cars operating against the flow of maximum travel will use the trackage of the former 44 and 49 lines on Arlington Avenue. It is expected that only 1700-series cars built in 1950 will survive beyond 1971.

* An American couple was seen at the University Avenue subway station on King Street gazing in puzzlement at a sign pointing to the northeast corner which read: Ex Street Cars. The woman wondered out loud: "What are they now?"

* By now almost everyone is aware of the testing of at least one DuWag built "streetcar" that will soon take place on the lines of the Massachusetts Bay Transportation Authority that will be sponsored by the U.S. Department of Transportation. Interest in the Hannover-style DuWag unit(s) has also been expressed by Shaker Heights, Edmonton and Vancouver, although Shaker Heights is reported to have lost interest when they discovered the test car would be 10" narrower than their existing fleet. Frankly, this doesn't make sense in light of the fact that the unit being brought over is not offered for sale, and SHRT, if they wished to purchase units could obviously order cars of whatever dimensions were required.

The addition of Vancouver and Edmonton to the list of interested parties will surprise many, and although we are unable to name the source of this information at this time, it is reliable. San Francisco has also been mentioned as a possible test site, however as they are now virtually committed to the Klauder design it is unlikely the DuWag unit will visit California. Once San Francisco's new cars are delivered, expect to see the sale of at least 20 of the 25 cars of the 1016-1040 series to El Paso. These units are just 19 years old, and were the last PCC cars built in North America. The present El Paso fleet is 34 years old this year, and are the last representatives of the first production model PCC in service in North America.

TROLLEY COACH NEWS.....TTC trolleycoach 9213 continues to run in Boston, and the test period for this unit on the MBTA has been extended. 9213 will probably go to Seattle next.....Once trolleycoach 9276 leaves Hillcrest for Lansdowne Division, numbering will skip to 9300 and deliveries will be made to Eglinton Division (9300 expected mid-September). 9200-9209 now at Eglinton will eventually return to Lansdowne, and once 9351 is in service, the missing numbers will be completed for Lansdowne.....Less than 20 small Brill coaches left in service on the TTC. All of them are based at Eglinton and see service only on route 61-NORTOWN. A number of Brill T-48 coaches transferred from Lansdowne to Eglinton.....None of the few remaining Marmon-Herrington trolleycoaches have been in service since June, although some should return to service in September.

SHORT TURN.....Class A3 4226 has been retired to Hillcrest for regauging and will be one of the two cars to be shipped to Tampico in the fall.....The only air cars still in service are 4199, 4253, and 4586, and all represent the last of their class in revenue use.....A new transfer is in use on the Exhibition services (city fare) in 1971, headed EXHIBITION. The timepoints usually found on TTC transfers have been replaced by the words "Canadian National Exhibition".....Due to construction strikes, the opening of the Yonge-Sheppard subway extension, originally scheduled for March 30, 1973, has been dropped. Once the strikes are settled, a new date is expected from the TTC.....Rail repairs including necessary replacement are presently being made on Queen east from Maclean to Neville Loop.....Another similar track job is also in progress on St. Clair west from Mount Pleasant to the subway.....Base service on the KINGSTON ROAD route was dropped from 8 to 10 minutes on the summer schedule, resulting in a decrease of cars assigned from 10 to 7.....With the exception of car 4625, none of the A11 class (4625-4674) are now used on QUEEN, and most are used in rush hours.....Electric Railroaders Association have announced that the entire 1971 volume of Headlights will consist of a fifty year history of the TTC, written by John F. Bromley, and due for publication before the year is out.....John Mills book on Hamilton will be ready before the end of October..... Mexico City has applied an experimental paint scheme of light red and white with gray skirting to car 2282 (ex-Detroit 282). The car was also rebuilt with a single front door and fibreglass bucket seats. One of their trolleycoaches was similarly rebuilt.....Boston, after converting the former Watertown Carhouse into a paint shop, is repairing many of their rather decrepit PCC cars, and the old tangerine-cream paint scheme is being applied , but with the new style numbers.